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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,561	04/07/2005	Teruo Komori	268829US0PCT	8994
22850 7590 06/28/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER BALDWIN, GORDON	
			ART UNIT 1775	PAPER NUMBER
			NOTIFICATION DATE 06/28/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	Application No. 10/530,561	Applicant(s) KOMORI ET AL.	
	Examiner Gordon R. Baldwin	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>20061025</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-6, 10-14 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Motoshige (Japanese Pub. No. 2001-334114).**

**Consider claims 1-3, 5-6, 11 and 19-20,** Motoshige teaches a ceramic honeycomb filter with a plurality of parallel passages made of silicon carbide or silicon nitride (Para. 24) that consist of large-diameter fluid passages each having a large cross-sectional area and small-diameter fluid passages having smaller cross-sectional areas than those of the large-diameter fluid passages. (Solution from the abstract) The large and small diameter passages can be arranged so that the large diameter fluid channels can act as the inlet port while the small or narrow-diameter fluid passages can act as the outlet. (Claim 6) Motoshige also teaches that the passages can have a sealing agent put in them so that one end face of each of the larger-diameter fluid passages and one end face of each small-diameter fluid passages are sealed, so that the sealed end face of each of the large-diameter fluid passages and the sealed end faces of each of the small-diameter fluid passages are opposite each other. (Solution from the abstract) As shown in figure 3 (a-I and 4 a-1), the large and small plugs are at opposite ends of the cylinder structure from each other in a perpendicular arrangement to the longitudinal direction of the cylinder.

Additionally, Motoshige teaches that the honeycomb shaped filter can be use<sup>d</sup> in a vehicle as a diesel particle stripper. (Para. 0006)

**Consider claim 4**, Motoshige teaches, in figure 1 and 2, that the center of gravity for the large diameter holes and the center of gravity for the small diameter holes are equal. Since both diameters of the different sized holes are taught in a symmetrical arrangement with the center of gravity for the large-diameter passages and the small-diameter passages being the center of the cylinder, they are both considered to have equal distances to their centers of gravity.

**Consider claim 10**, Motoshige teaches the use of silicon in the same capacity as the applicant, therefore the silicon carbide used in Motoshige is considered to have the physical characteristics as those claimed by the applicant. It has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a *prima facie* case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 ( Fed. Cir. 1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

**Consider claims 12-14**, Motoshige teaches that the through-holes can be in a polygonal shape as well as octagonal and round. (Para. 22 and figures 1,2 and 5)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 7-9 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motoshige (Japanese Pub. No. 2001-334114) as applied above, and further in view of Ohno (U.S. Pat. No. 6,669,751).**

**Consider claims 7, 9, 17, 18 and 19,** Motoshige teaches a ceramic honeycomb filter with a plurality of parallel passages made of silicon carbide or silicon nitride (Para. 24) that consist of large-diameter fluid passages each having a large cross-sectional area and small-diameter fluid passages having smaller cross-sectional areas than those of the large-diameter fluid passages. (Solution from the abstract) The large and small diameter passages can be arranged so that the large-diameter fluid channels can act as the inlet port while the small or narrow-diameter fluid passages can act as the outlet. (Claim 6) Motoshige also teaches that the passages can have a sealing agent put in them so that one end face of each of the larger-diameter fluid passages and one end face of each small-diameter fluid passages are sealed, so that the sealed end face of each of the large-diameter fluid passages and the sealed end faces of each of the small-diameter fluid passages are opposite each other. (Solution from the abstract) As shown in figure 3 (a-l and 4 a-1), the large and small plugs are at opposite ends of the

cylinder structure from each other in a perpendicular arrangement to the longitudinal direction of the cylinder.

However, Motoshige does not teach that the porous ceramic body has a porosity of 30-80%, nor does Motoshige teach the bundling of a plurality of porous ceramic members with a sealing material.

Ohno teaches a ceramic honeycomb structure (with opposite ends of the through-holes plugged (Fig. 4) made of silicon carbide (Col. 5 lines 35-48), with a porosity of between 30-50% and a thickness of the partition wall being less than 0.46mm (Col. 24 lines 55-60) for a honeycomb filter for diesel engines. Ohno also teaches the use of a seal layer to hold the plurality of honeycomb structures together with the cell wall carrying an oxide catalyst formed from a platinum group element like Pt. (Col. 6, lines 40-47 and 14 (a)).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the silicon carbide plugged honeycomb structure with different sized through-holes of Motoshige with the silicon carbide plugged honeycomb structure with a plurality of honeycomb structures held together with a sealing layer of Ohno to provide a honeycomb structure with superior strength and assembly that prevents fluid leaks from the peripheral surface. (Ohno Col. 2 lines 50-65)

**Consider claim 8**, Motoshige discloses the claimed invention except for the surface roughness of the partition of the ceramic member. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the surface roughness for the desired application, since it has been held that discovering an

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optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

**Consider claims 15 and 16**, Motoshige discloses the claimed invention except for the ratio between the large volume through-hole area to the small volume through-hole area. It would have been an obvious matter of engineering choice to a person skilled in the art at the time of the invention was made to adjust the ratio of large and small volume through-holes for the desired application, since such a modification would have involved a mere change in the size of the component. A change in size is generally recognized as being within the level of ordinary skill in the art. Gardner v. TEC systems, Inc. 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert denied, 469 U.S. 830, 225 USPQ 232 (1984).

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon R. Baldwin whose telephone number is (571)272-5166. The examiner can normally be reached on M-F 7:45-5:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GRB

  
JENNIFER C. MCNEIL  
SUPERVISORY PATENT EXAMINER

6/22/7